

to therapy for any of nine therapeutics classes. **METHODS:** This prospective randomized trial used claims data from a large pharmacy chain beginning in February 2013. Patients were randomly assigned to an intervention group that received pharmacist phone calls to discuss their newly prescribed medication within three days after dispensing (n=219,611) or a control group that received no calls (n=225,497). We tracked patients' claims data for 180 days to evaluate their medication adherence. Baseline demographic characteristics and therapeutic class distribution were compared between groups. Medication adherence was measured by Patient Days on Therapy (PDOT) within 180 days for every targeted therapeutic class (anti-anginal agents, betablockers, diuretics, anti-asthmatic and bronchodilator agents, genitourinary agents, anti-depressants, anti-Parkinson, anti-coagulants, and hematological agents) and overall. Significance was determined using χ^2 and t tests between intervention and control groups. **RESULTS:** Both intervention and control groups had similar baseline demographic and therapeutic class distributions ($P>0.05$). Comparison by therapeutic class found large variations of adherence with hematological agents having the greatest adherence (PDOT=105.57) while anti-angina agents had the lowest (PDOT=47.06). The intervention group had greater adherence than the control group in every therapeutic class with the PDOT differences ranging from 0.48 days for anti-angina agents to 2.63 days for anti-Parkinson agents ($P<0.05$). Overall, the intervention group was more adherent than the control group (PDOT 86.27 vs. 84.79, $P<0.01$). **CONCLUSIONS:** A community pharmacist telephone call program improved medication adherence across multiple therapeutic classes.

PHS82

SYSTEMATIC LITERATURE REVIEW OF COMPLIANCE AND PERSISTENCE PROGRAMS IN INFLAMMATION AND IMMUNOLOGY

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OBJECTIVES: Patient compliance and persistence to pharmacotherapies is important, especially in chronic conditions in inflammation and immunology (I&I) therapeutic area, to improve patient outcomes. Programs/interventions that aim at improving medication compliance and persistence play an important role in optimizing care. Since there is a lack of relevant systematic reviews in I&I, the objective of this study is to provide a comprehensive understanding of the effectiveness of compliance and persistence programs in the I&I therapeutic area. **METHODS:** A systematic literature search was conducted and studies were identified from PubMed, conference proceedings and grey literature. Selection criteria included studies published in English, German, Spanish, Italian and French languages between January 2008 and September 2013, that evaluated the impact of programs on medication compliance and/or persistence in I&I. Abstracts were screened by two researchers for inclusion, and discrepancy was resolved by a third researcher. Selected publications underwent full review and abstraction. **RESULTS:** A total of 3,637 abstracts were screened, of which 29 evaluated the effectiveness of compliance and persistence programs. Studies reviewed covered different countries: the US (n = 19); Italy and the UK (n = 2 each); Australia, Denmark, Malaysia, and Poland (n = 1 each); multicenter (n = 1) and unreported/no country mentioned (n = 1). The majority of patient programs were conducted in the osteoporosis disease area (n = 9), followed by inflammatory bowel disease (n = 4), and multiple sclerosis and ulcerative colitis (n = 3 each). The most effective interventions were one-on-one tailored counseling and web-based education/communications that improved medication compliance by 44% and 31%, respectively. Additionally, group-based motivational and problem-solving support resulted in improvement of 12% at 24 months. **CONCLUSIONS:** A well-developed compliance program can have a significant impact on improving patient compliance as well as persistence to therapies. This, in turn may improve patient outcomes.

PHS83

THE REACH OF ADEQUATE PHARMACOLOGICAL ADHERENCE AND THE TIME NECESSARY TO IMPROVE IT AFTER PERFORMING A PHARMACOTHERAPEUTIC FOLLOW UP TO A COHORT OF PATIENTS WITH HIV. FEBRUARY 2012-JUNE 2013

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OBJECTIVES: Determine the proportion of patients who improve adherence subsequent evaluated pharmacotherapeutic follow-up (PF), also, identify the factors that explain the improvement of bond and the time necessary to achieve that result. **METHODS:** A dynamic cohort study was performed on patients classified as non-adherent (205 patients). Two questionnaires were used (The use of questionnaires was authorized by the authors), the Simplified Medication Adherence Questionnaire developed by Hernandez Knobel et al, and the Simplified Medication Adherence Scale developed by Ventura-Cerdá et al. The questionnaires were administered by a pharmacist during consultations of PF in which education was provided about the importance of adherence (the number of PF was defined at pharmacist's discretion). The patient left the study when they were cataloged as adherent by both questionnaires. For the qualitative variables, absolute and relative frequencies were used, and for quantitative variables summary measures were used. For bivariate analysis, Log-rank test, T-Student and U-Mann Whitney were used. We worked with a confidence interval of 95% and alpha <0.05. To adjust the association measures the Cox Proportional Hazards Model was applied. SPSS® version 21 for Windows (SPSS Inc. Chicago, Illinois, USA), covered by CES university was used. **RESULTS:** The 61.5% of patients improved adherence, were required 206 days or less to achieve this result (interquartile range: 88-460). The number of PF queries performed (p: 0,012), the city (p: 0,003) and area of residence (p: <0,000), showed statistical association with improved adherence, of which only the city (HR for Bogota 0.39, IC 0.17-0.87; Cali 1.34, IC 0.75-2.4, compared with Medellin) and the number of PF (HR 0.87 IC 0.79-0.95) maintained their relation for the multivariate analysis. **CONCLUSIONS:** The city of residence and the number of PF consultations conducted were associated with improved adherence. The education provided by the PF improves adherence in patients diagnosed with HIV, classified as non-adherent.

PHS84

FACTORS AFFECTING ACCESS AND ADHERENCE TO THE RECOMMENDED LEVEL OF DIABETES CARE IN TYPE II DIABETES ADULTS

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OBJECTIVES: The objective of this study was to assess realized access, determine the existence of equitable or inequitable access and find the factors affecting the adherence to the three diabetes care components. **METHODS:** Behavioral Risk Factor Surveillance System (BRFSS) 2010 was used as the data source. Hierarchical logistic regression was used to determine equitable or inequitable access to the recommended levels of diabetes care. Data analysis was performed using SAS® version 9.2. **RESULTS:** Realized access was highest for biannual glycosylated hemoglobin testing (80.30%) followed by annual dilated eye examination (70.39%) and daily self-monitoring of blood glucose (SMBG) (63.00%). Hierarchical logistic regression revealed, enabling resources drove access to recommended level of SMBG and HbA1c testing, while recommended level of eye exams were driven by predisposing characteristics. Uninsured individuals and those who did not receive diabetes education were less likely to adhere to diabetes care. **CONCLUSIONS:** Realized access of daily SMBG needs to be increased by appropriate measures. The results suggest that inequitable access exists for all the three diabetes care components. Thus, measures for increasing equitable access are recommended. Knowing the factors affecting adherence to diabetes care may assist intervention planners, diabetes educators and health care professionals in attempting to improve diabetes management.

PHS85

DETERMINING PATIENT SATISFACTION, PERCEPTION OF VALUE, AND MONETARY WORTH ASSOCIATED WITH ADHERENCE PACKAGING AND PHARMACY SERVICES

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OBJECTIVES: Pharmacists can impact the medication adherence problem by offering adherence packaging and specialized services. Evaluating products and services that alleviate this dilemma is beneficial for improving patients' health outcomes. Understanding consumer perspectives are important to determine continued use and expansion of such products and services. Objectives include to: (1) evaluate patients' satisfaction with the services, (2) assess patients' perceptions of the value of adherence packaging on their medication taking behavior, and (3) determine a dollar amount patients' view as a worthy investment for services. **METHODS:** Patients and caregivers >18 years of age with at least six medications, three chronic conditions, and six months of adherence packaging utilization at a community pharmacy in Toledo, Ohio were studied. Services included pharmacist-provided counseling, refill synchronization, follow-up phone calls, and delivery services. Three structured focus group sessions were conducted. Satisfaction was assessed using a survey with a Likert-type scale. Show of hands and discussion were used to determine the value/impact on medication taking behavior and outcomes. Monetary worth/dollar amounts were obtained through written responses to open-ended questions. Responses analyzed using percentages and frequency distributions. **RESULTS:** Thirty patients and caregivers participated and 93% (28/30) were satisfied with services provided. Participants reported adherence packaging and services led to fewer ER visits/hospitalizations and assisted in bringing blood sugar and blood pressure closer to goal. Two participants felt adherence packaging was priceless and could not put a monetary value on the product or services. Participants reported the following monetary values: up to \$50 per month (adherence packaging only), \$75 (adherence packaging with delivery), \$100 (adherence packaging with counseling), and \$120 (adherence packaging, delivery, and counseling). **CONCLUSIONS:** Overall, individuals were satisfied and saw value in the adherence packaging system and services. Evidence suggests these services positively impacted health outcomes. Payers and health plans should consider offering such products/services to their customers.

PHS86

MILITARY VETERANS' PERCEPTIONS OF DISAGREEMENT WITH THEIR PROVIDER REGARDING THEIR MEDICALLY UNEXPLAINED SYMPTOMS ARE ASSOCIATED WITH LOWER SATISFACTION AND INTENTIONS TO ADHERE TO TREATMENT AND POORER HEALTH-OUTCOME EXPECTATIONS

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OBJECTIVES: Medically unexplained symptoms (MUS) are pervasive amongst returning veterans from military operations abroad. Veteran perceptions of MUS predict adherence and improvement, but little is known about patients' perceptions of disagreement with their providers about MUS and its effect on adherence and outcome expectations. Given the inherent uncertainty on both the patient's and the provider's part regarding MUS, it is likely that there is much room for disagreement, particularly perceived disagreement on the part of the patient, and a patient who disagrees with the provider is less likely to adhere to the providers' recommendations for treatment and therefore less likely to see improvement in his/her condition. This study evaluated the degree to which veterans perceive disagreement with their primary care providers regarding the MUS overall and the relationship of these perceptions to behaviors and outcomes of interest. We hypothesized that perceived disagreement would significantly predict intentions to adhere, satisfaction with care, and expectations for MUS-improvement. **METHODS:** Veterans (n=180) experiencing MUS reported on perceived disagreement with their provider regarding the MUS, intentions to adhere, expectations for MUS improvement, and satisfaction. **RESULTS:** 33% of veterans perceived no disagreement with their provider, 22% perceived slight/minor disagreement, 26% perceived moderate disagreement, 10% perceived quite a bit of disagreement, and 9% perceived complete disagreement. Results were as expected with significant relationships between perceived disagreement and intentions to adhere ($r(174)=-0.21, p<0.01$) and satisfaction with

the primary care provider ($r(177)=-0.43, p<0.001$), but not with expectations for MUS improvement ($r(178)=-0.05, p=0.55$). **CONCLUSIONS:** The findings indicate that addressing perceptions of disagreement (and potentially actual disagreement) with the provider will be an important intervention target, but that veterans' expectations for improvement and therefore potentially their actual improvement may be difficult to change.

PHS87

ESTIMATING LONG-TERM FUNCTIONAL IMPAIRMENTS OF RHEUMATOID ARTHRITIS: INTEGRATION OF NATIONWIDE SURVIVAL WITH HEALTH ASSESSMENT FROM CLINICAL COHORT

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OBJECTIVES: The lifetime functional impairments associated with rheumatoid arthritis (RA) have received little attention in the literature. This study determines the dynamic changes of different physical functional impairments over time and their total duration after RA diagnosis. **METHODS:** We used a population-based cohort consisting of 39,455 incident RA patients in Taiwan between 1998 and 2009 to estimate the survival functions and extrapolate to lifetime through a semi-parametric method. The Health Assessment Questionnaire Disability Index (HAQ-DI) was used to measure impairment items and levels in 394 consecutive patients at three clinics for the period 2011-2012. A HAQ-DI score over 1.5 was considered as suffering from severe disability. Lifetime functional impairments were obtained by extrapolating the gender and age-stratified survival functions to lifetime, and then multiplying them with the proportions of different kinds of functional impairments over time. **RESULTS:** On average, RA patients had 5.40, 15.05, and 2.36 years with no, moderate, and severe disability, respectively. In RA patients diagnosed at the ages of <50, 50-64, and ≥65 were expected to have 23.02, 15.03, and 8.46 years living with disabilities, which would be about 76.1%, 75.3% and 77.7% of his/her life expectancy, respectively. A higher proportion of females suffered from functional disabilities than males, at 78.7% and 59.2%, respectively. The most common functional impairments were reach and grip. **CONCLUSIONS:** RA patients suffer from functional disabilities over three-fourths of their remaining lifetime, and are in need of long-term care.

PHS88

PATIENTS' PERCEPTIONS OF PHYSICIANS' CARING ATTITUDE IS THE CRITICAL FACTOR IN DETERMINING PATIENT SATISFACTION

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OBJECTIVES: Patient satisfaction is a crucial component of better health care outcomes. Recently, many patients voluntarily started to report their satisfaction on physicians using the Internet. Given these, there is need to evaluate the relationship between physicians' attitude and patients' satisfaction using the recent web-based survey data. **METHODS:** Data from a cross-sectional survey on the ratings of physicians using a convenience sampling were used to examine the relationship between physicians' attitudes and patients' satisfaction. The independent variable was the physician's attitude, and the dependent variables were patients' satisfaction with the physician and patients' satisfaction with the office setting. **RESULTS:** A total of 273,994 patients were included. The average (standard deviation, SD) of patients' satisfaction with the physician was 78.08 (0.14), and the average (SD) of patients' satisfaction with the office setting was 78.62 (0.12) out of 100. Physicians' attitude was a significant predicting factor on patients' satisfaction with the physician ($b = 8.71, p < 0.001$) and the office setting ($b = 7.03, p < 0.001$). The predictor variables (physicians' attitudes and covariates) accounted for 92.5% of the variance on satisfaction with their physicians. Additionally, both longer waiting times to get an appointment to see physicians and to see physicians after arriving at the office were highly correlated with lower patients' satisfaction with their physicians ($\rho = -0.26, p < 0.001$ and $\rho = -0.32, p < 0.001$, respectively) and the office setting ($\rho = -0.43, p < 0.001$ and $\rho = -0.50, p < 0.001$, respectively). **CONCLUSIONS:** There is a strong relationship between perceptions of physicians' friendliness/caring and patients' satisfaction. Empathy skills can be significantly increased after taking targeted educational programs. To facilitate patients' satisfaction with health care, a continuous effort to develop empathic ability of physicians should be undertaken so that patients perceive their empathic physicians.

PHS89

THE IMPORTANCE OF METHODOLOGY IN REPORTING PERFORMANCE INDICATORS

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OBJECTIVES: The aim of this research is to use two public reporting methods to compare and contrast institutional performance by analyzing, as an example, a patient satisfaction indicator, namely, percentage of patients who would definitely recommend the emergency department (ED) to their friends and family. **METHODS:** There are a multitude of ways to evaluate hospital results on patient satisfaction in ED. A standard approach sets a target to gauge hospital performance. Values above the target/benchmark meet or exceed expectations, while those institutions below the target may consider initiatives and programs to improve their patient satisfaction score. An alternative method is the use of funnel plots that assess the relationship between the outcome measure (patient satisfaction score) and volume of cases across disparate facilities when evaluating institutional performance. Allowances are made for hospitals falling within a band, called control limits, that adjusts for precision. **RESULTS:** From April 2010 to March 2011, 99 Ontario hospitals reported

their scores of a NRC-Picker patient satisfaction survey question. A funnel plot was constructed using a benchmark (70.6%). In all, 45(45%) institutions performed within expected variation, that is within or above the 99.8% control limit, and 54(55%) fell below the lower 99.8% control limit. When we simply use the 70.6% target without any control limits, 19 facilities exceeded the threshold, while 80 fell below it. Divergence in reporting occurred where 26 institutions met the 99.8% control limits set by the funnel plot, but fell below the benchmark set when using a fixed target of 70.6%. **CONCLUSIONS:** The two approaches lead to different conclusions on hospital performance for 26 (26%) institutions. The first method compared hospital scores against a target or preset benchmark while the second approach used funnel plots to interpret institutional performance with greater precision by taking into account variation via sample size.

PHS90

THE CLIENTS' VOICE: SATISFACTION WITH HIV/AIDS CARE IN A PUBLIC AND PRIVATE HEALTH FACILITY IN KABALE DISTRICT, UGANDA

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OBJECTIVES: In Uganda in 2008, about 121,218 people were on Antiretroviral therapy, which was 40% of all persons eligible for it then. Despite increasing availability and accessibility to HIV/AIDS care services, little information is available on clients' thoughts about the services. This cross-sectional study was done to determine client satisfaction with quality of HIV/AIDS care services in a public and a private health facility in Kabale district, south western Uganda. **METHODS:** 216 client exit interviews were conducted in two clinics in Kabale district, south western Uganda using the SERVQUAL tool. Data were analyzed by looking at differences in mean scores between clients' expectations and perceptions. Paired t-tests and chi-square tests were done. **RESULTS:** Clients were dissatisfied with HIV/AIDS care in both health facilities, with the overall average score of -0.06. The public health facility scored -0.09 and the private scored -0.03. In both facilities and overall, tangibles was rated worst (overall score of -0.16) and responsiveness was rated best. Drug shortages were frequent and caused dissatisfaction. **CONCLUSIONS:** The findings suggested that quality of HIV/AIDS care in Kabale was lacking. They indicate that managers and policy makers need to pay more attention to it, especially physical facilities, equipment, ability of service providers to perform the service accurately, and drug shortages. Future research can be done on a larger scale within the district and beyond.

PHS91

LEAN "INFLOW" CHANGE MAY IMPROVE PRIMARY CARE PATIENT SATISFACTION: A PILOT STUDY

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OBJECTIVES: This study examines the impact of Lean "inflow" change on patient satisfaction at a primary care pilot clinic location of a large, multispecialty health care provider in Northern California undergoing system-wide transformation. **METHODS:** The health care provider serving 2+ million patients has invested a significant amount of resources in Lean management to transform the way primary care is delivered. The Press Ganey (PG) outpatient survey was used. The monthly PG score, covering a two-year period, compared pre and post-implementation of Lean in the pilot site relative to two comparison sites. Monthly site differences between pilot and comparators in median PG scores were calculated as the dependent variable. Segmented regression with a breakpoint at the start of the intervention was used to analyze departmental PG scores over time, adjusting for clinical FTE and autocorrelation. **RESULTS:** Relative to comparator 1, there was a significant trend post Lean implementation of 0.2 percentage point per month ($p=0.002$) in pilot site Internal Medicine and 0.1 percentage point per month ($p=0.004$) in pilot site Pediatrics. There were significant trends post Lean implementation of 0.5 percentage point per month ($p<0.001$) in pilot site Family Medicine and Pediatrics relative to comparator 2. Besides, there was an immediate and 2 percentage points ($p<0.001$) increase in pilot site relative to comparator 2 at the intervention month. **CONCLUSIONS:** Lean "inflow" changes had improved patient satisfaction in pilot site Pediatrics by 1.9 and 7.5 percentage points relative to two comparators, respectively. Patient satisfaction in pilot site was estimated to increase by 2.7 percentage points relative to comparator 1 for Internal Medicine and 7.6 percentage points relative to comparator 2 for Family Medicine after Lean was implemented, based on the trend of site differences in the preceding year. Overall, Lean "inflow" change seemed to improve primary care patient satisfaction.

PHS92

BELIEFS IN THE EFFECTIVENESS OF SMOKING CESSATION INTERVENTIONS AMONG MALE SAUDI COLLEGE STUDENTS

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OBJECTIVES: Several pharmacological and behavioral interventions have been implemented to help smokers with smoking cessation efforts. However, smoking still persists as there may be a lack of belief in the effectiveness of these interventions. The objective of this study was to identify predictors that affect belief in the effectiveness of smoking cessation interventions among male Saudi college students. **METHODS:** A non-experimental cross-sectional study of male college students was conducted in two cities in the Kingdom of Saudi Arabia. A pre-tested, validated survey was used to evaluate factors affecting beliefs in the effectiveness of smoking cessation interventions, such as socio-demographics, academic performance, and status of smoking. Beliefs about cessation medications or behavioral cessation programs were assessed via a pre-validated Likert scale. Data was collected between December 2011 and January 2012. Descriptive and regression analyses were conducted. **RESULTS:** A total of 337 surveys were received (response rate of 36.6%). About 31% of respondents were self-identified smokers. The average age of respondents was 22.6 (± 2.2) years. The majority of